

μ SR studies of unconventional superconductivity in CeTIn_5 ($T=\text{Ir, Co}$)

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We report on muon spin rotation/relaxation (μ SR) measurements in heavy fermion superconductors CeIrIn_5 and CeCoIn_5 to elucidate the origin of unconventional superconductivity through their magnetic properties.

In CeIrIn_5 , we demonstrate the absence of static long range magnetic ordering down to 20mK under zero magnetic field. In a magnetic field of 400G ($> H_{c1}$), the muon spin relaxation due to the inhomogeneous magnetic induction of flux line lattice sets in below 0.4K, showing that bulk superconductivity occurs around 0.4K while the zero resistance is observed above 1 K. The spin relaxation rate shows gradual increase with decreasing temperature down to 20mK, indicating that the quasiparticle excitation does not fall exponentially with temperature. This result strongly suggests the superconductivity with non- s wave pairing in this compound. The result of μ SR study on CeCoIn_5 will be also reported.
